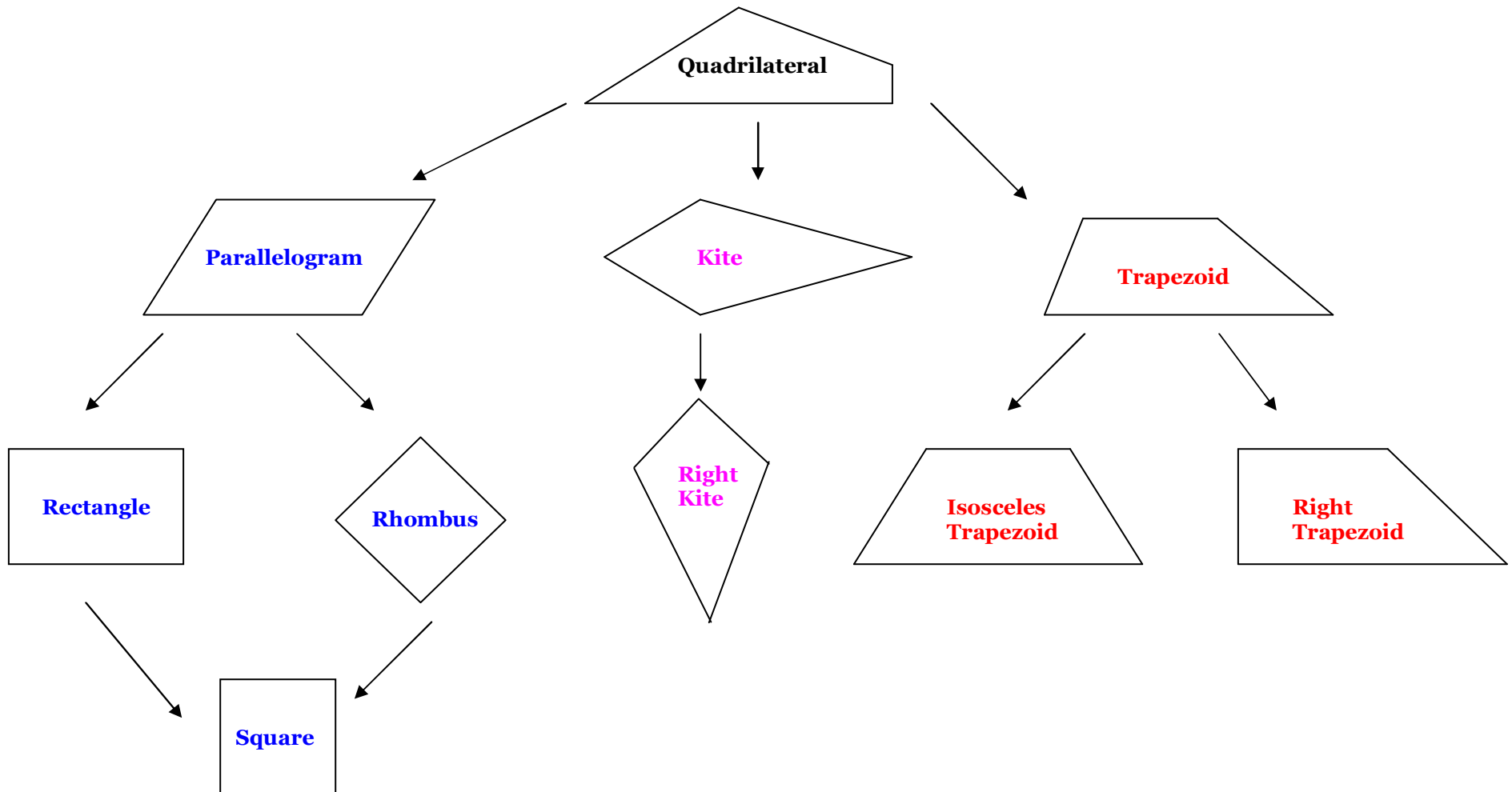


# Properties of Quadrilaterals

Model Examples

Goal: The goal is to know and apply the properties of quadrilaterals.



**Quadrilateral**

1. A polygon with four sides.

**Parallelogram**

1. Both pairs of opposite sides are parallel.
2. Both pairs of opposite sides are congruent.
3. One pair of opposite sides are parallel and congruent.
4. Diagonals bisect each other.
5. Both pairs of opposite angles are congruent.
6. Consecutive angles are supplementary.

**Kite**

1. Both pairs of consecutive sides are congruent but opposite sides are not congruent.
2. Diagonals are perpendicular.
3. Exactly one pair of opposite angles are congruent.

**Trapezoid**

1. Exactly one pair of opposite sides are parallel.
2. Exactly two pairs of consecutive angles are supplementary.

**Rectangle**

1. All the properties of a parallelogram.
2. Has a right angle.
3. Diagonals are congruent.

**Rhombus**

1. All the properties of a parallelogram.
2. All sides are congruent.
3. Diagonals are perpendicular.
4. Diagonals bisect the opposite angles.

**Right Kite**

1. All the properties of a kite.
2. Has a right angle.

**Isosceles Trapezoid**

1. All the properties of a trapezoid.
2. Non-parallel sides are congruent.
3. Diagonals are congruent.
4. Base angles are congruent.

**Right Trapezoid**

1. All the properties of a trapezoid.
2. Has a right angle.

**Square**

1. All the properties of a parallelogram.
2. All the properties of a rectangle.
3. All the properties of a rhombus.

### Some tips:

- Committing the properties of quadrilaterals to memory will make it much easier for you to be able to apply them. The practice problems will give you an opportunity to test your knowledge of the properties.
- If you are faced with a sometimes, always, never question use the chart in the following way:
  1. If you move down the chart then use Sometimes.
  2. If you move up the chart then use Always.
  3. If you move across the chart then use Never.

For example:      A square is a rectangle? Sometimes, Always, or Never.

(The answer is Always because you moved up the chart.)

A rectangle is a trapezoid? Sometimes, Always, or Never.

(The answer is Never because you moved right across the chart.)

A quadrilateral is a kite? Sometimes, Always, or Never.

(The answer is Sometimes because you moved down the chart.)